

Filed: Concurrently herewith Attorney: Kevin L. Russell, Reg. No. 38,292  
Inventors: Katzer Telephone: (503) 227-5631

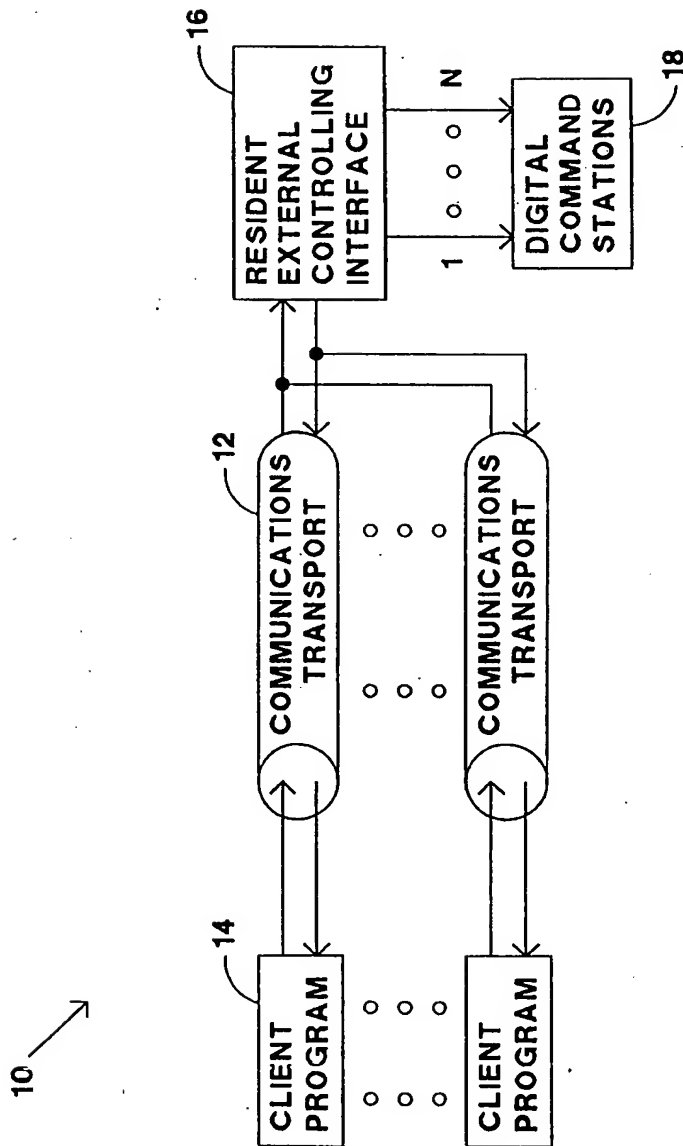


FIG. 1

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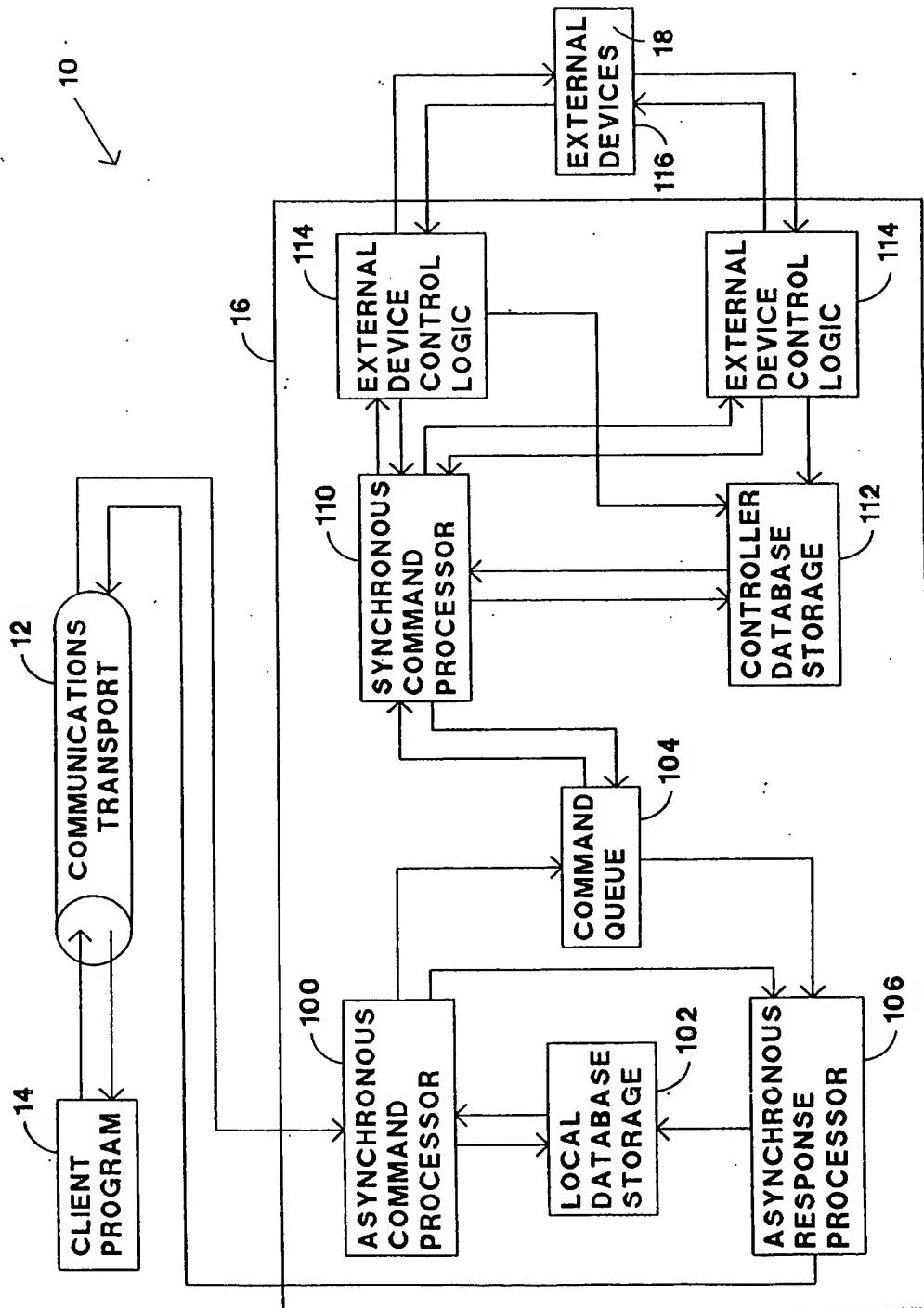


FIG. 2

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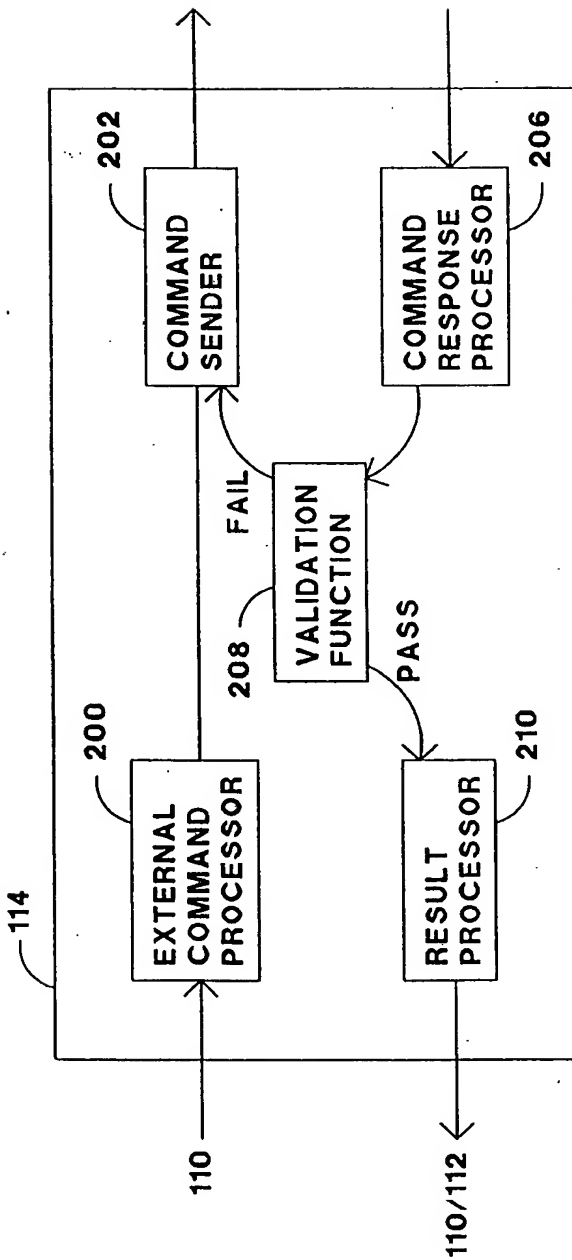
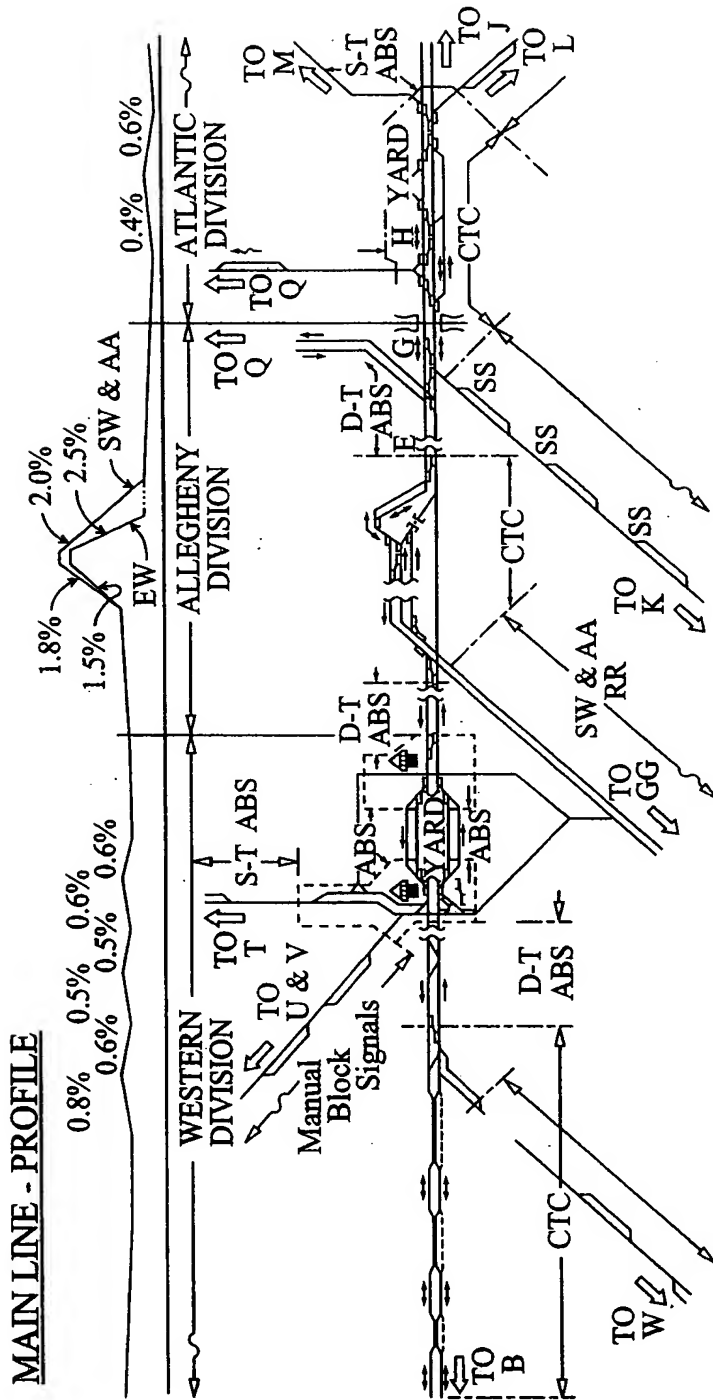


FIG. 3

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KEY:		
	POWER-OPERATED SWITCHES	INTERLOCKING TOWER
	MANUALLY-OPERATED SWITCHES	RESTRICTED CLEARANCE TUNNEL
	DIRECTION OF SIGNAL-CONTROLLED TRAFFIC	ABS = AUTOMATIC BLOCK SIGNALS
		CTC = CENTRALIZED TRAFFIC CONTROL
		SS = SPRING SWITCH
		D-T = DOUBLE-TRACK
		S-T = SINGLE-TRACK

**FIG. 4**

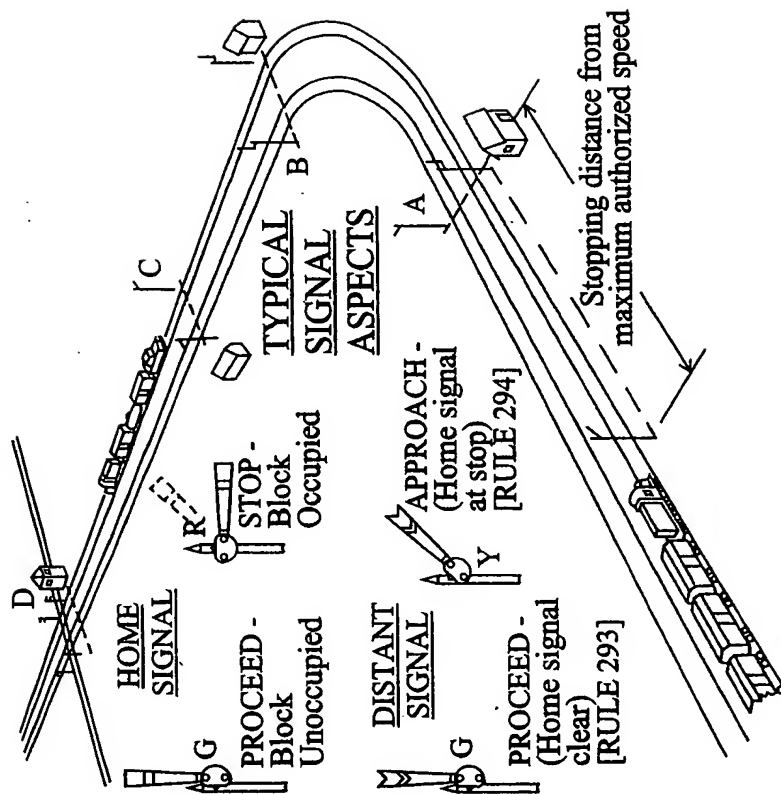


FIG. 5

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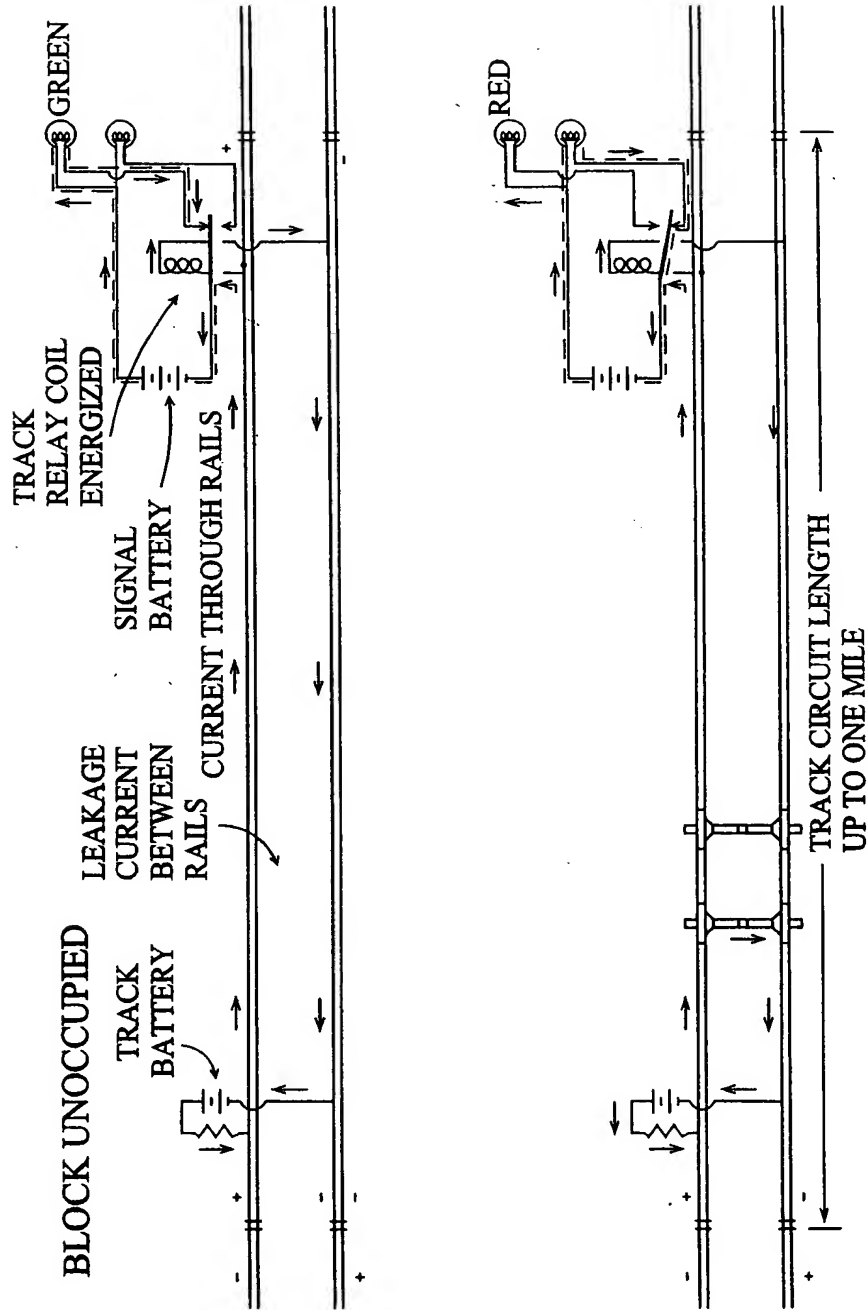


FIG. 6

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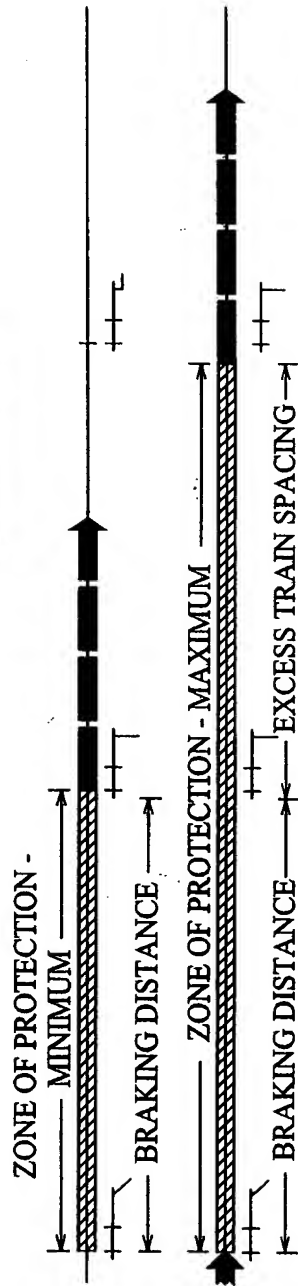
BLOCK SIGNAL PRACTICE - EXAMPLE

<u>NAME</u>	<u>ASPECT</u>	<u>INDICATION</u>
STOP	R — MARKER PLATE ↗	STOP AND PROCEED
APPROACH	Y ↘ +	PROCEED PREPARED TO STOP AT NEXT SIGNAL *
APPROACH MEDIUM	Y ↘ Y ↘ +	PROCEED PREPARED TO STOP AT SECOND SIGNAL *
ADVANCE APPROACH	Y ↘ G ↘ +	PROCEED PREPARED TO STOP AT THIRD SIGNAL †
CLEAR	G ↘ +	PROCEED
R = RED Y = YELLOW G = GREEN		
* TRAIN EXCEEDING MEDIUM SPEED MUST IMMEDIATELY REDUCE TO THAT SPEED		
† TRAIN EXCEEDING LIMITED SPEED MUST IMMEDIATELY REDUCE TO THAT SPEED		

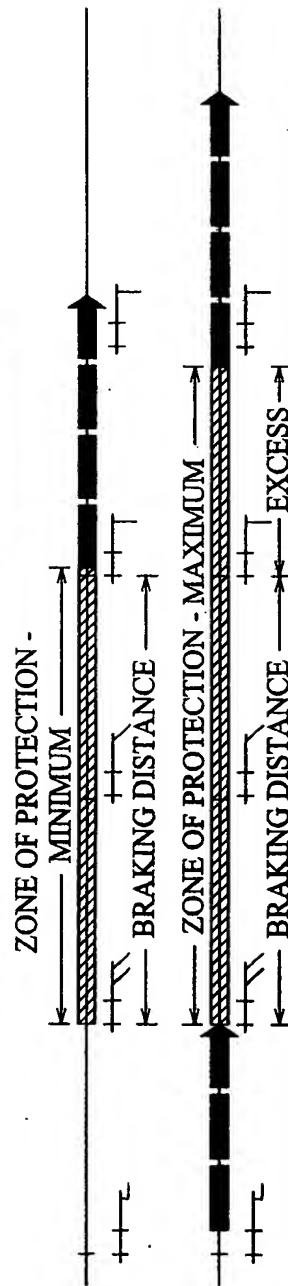
FIG. 7A

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TWO - BLOCK, THREE - INDICATION



THREE - BLOCK, FOUR - INDICATION



FOUR - BLOCK, FIVE - INDICATION

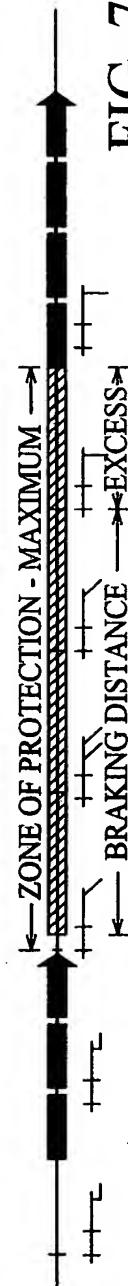


FIG. 7B

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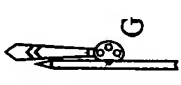
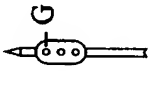
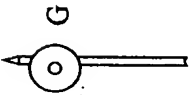
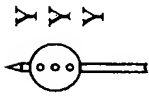
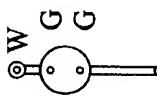
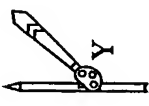
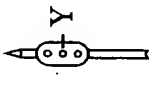
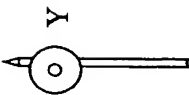
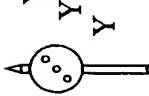
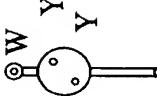
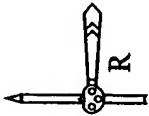
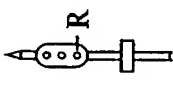
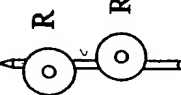
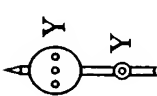
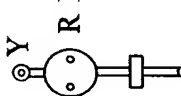
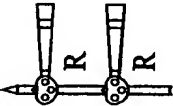
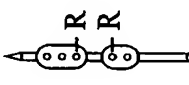
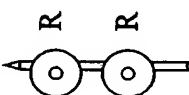
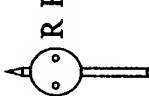
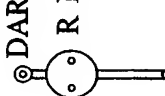
<u>NAME</u>	<u>INDICATION</u>	<u>ASPECTS:</u> <u>SEMAPHORE</u> (UPPER QUADRANT)	<u>COLOR</u> <u>LIGHT</u>	<u>SEARCH-</u> <u>LIGHT</u>	<u>POSITION</u> <u>LIGHT</u> (MODIFIED)	<u>COLOR</u> <u>POSITION</u> <u>LIGHT</u>
CLEAR	PROCEED AT NORMAL SPEED (RULE 281)					
APPROACH	APPROACH PREPARED TO STOP AT NEXT SIGNAL (RULE 285)					
STOP AND PROCEED	STOP AND PROCEED AT RESTRICTED SPEED (RULE 509)					
ABSOLUTE STOP	STOP (RULE 292)					
R = RED Y = YELLOW G = GREEN W = LUNER WHITE						

FIG. 8

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ASPECTS OF SIGNALS AT:	A	B	C
IF CLEARED FOR ROUTE STRAIGHT THROUGH TO TRACK ① (NORMAL SPEED)	G	G	G
	R	R	R
	R	R	R
IF CLEARED FOR DIVERGING ROUTE THROUGH HIGH-SPEED TURNOUT TO TRACK ② (LIMITED SPEED = 50 MPH)	G	Y	R
	R	G	G
	R	G	G
IF CLEARED FOR DIVERGING ROUTE THROUGH NO. 16 CROSSOVER TO TRACK ③ (MEDIUM SPEED = 30 MPH)	G	Y	R
	Y	G	G
	R	R	R
IF CLEARED FOR DIVERGING ROUTE THROUGH NO. 12 CROSSOVER INTO TRACK ④ (SLOW SPEED = 15 MPH)	Y	Y	R
	G	R	R
	R	G	G

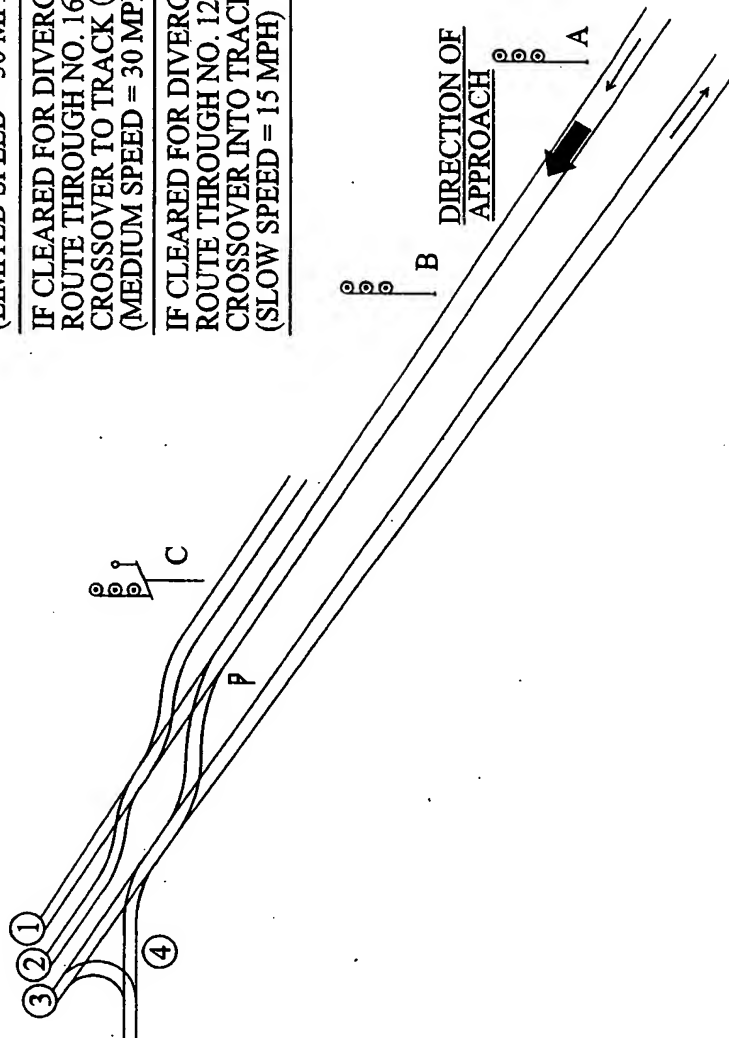


FIG. 9A

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<u>ASPECT</u>	<u>NAME</u>	<u>INDICATION</u>
G R R	CLEAR	PROCEED AT NORMAL SPEED
Y R R	APPROACH	PROCEED APPROACHING NEXT SIGNAL PREPARED TO STOP; TRAIN EXCEEDING MEDIUM SPEED MUST IMMEDIATELY REDUCE TO THAT SPEED
Y R G	APPROACH SLOW	PROCEED APPROACHING NEXT SIGNAL AT SLOW SPEED; TRAIN EXCEEDING MEDIUM SPEED MUST IMMEDIATELY REDUCE TO THAT SPEED.
G Y R	ADVANCE APPROACH MEDIUM	PROCEED APPROACHING SECOND SIGNAL AT MEDIUM SPEED.
Y G R	APPROACH MEDIUM	PROCEED APPROACHING NEXT SIGNAL AT MEDIUM SPEED.
Y G G*	APPROACH LIMITED	PROCEED APPROACHING NEXT SIGNAL AT LIMITED SPEED
R G R	MEDIUM CLEAR	PROCEED; MEDIUM SPEED WITHIN INTERLOCKING LIMITS
R G G*	LIMITED CLEAR	PROCEED; LIMITED SPEED WITHIN INTERLOCKING LIMITS
R R G	SLOW CLEAR	PROCEED; SLOW SPEED WITHIN INTERLOCKING LIMITS

\* May be replaced with triangular marker plate below second signal head (indicating "limited speed") if layout does not include medium speed routes

FIG. 9B

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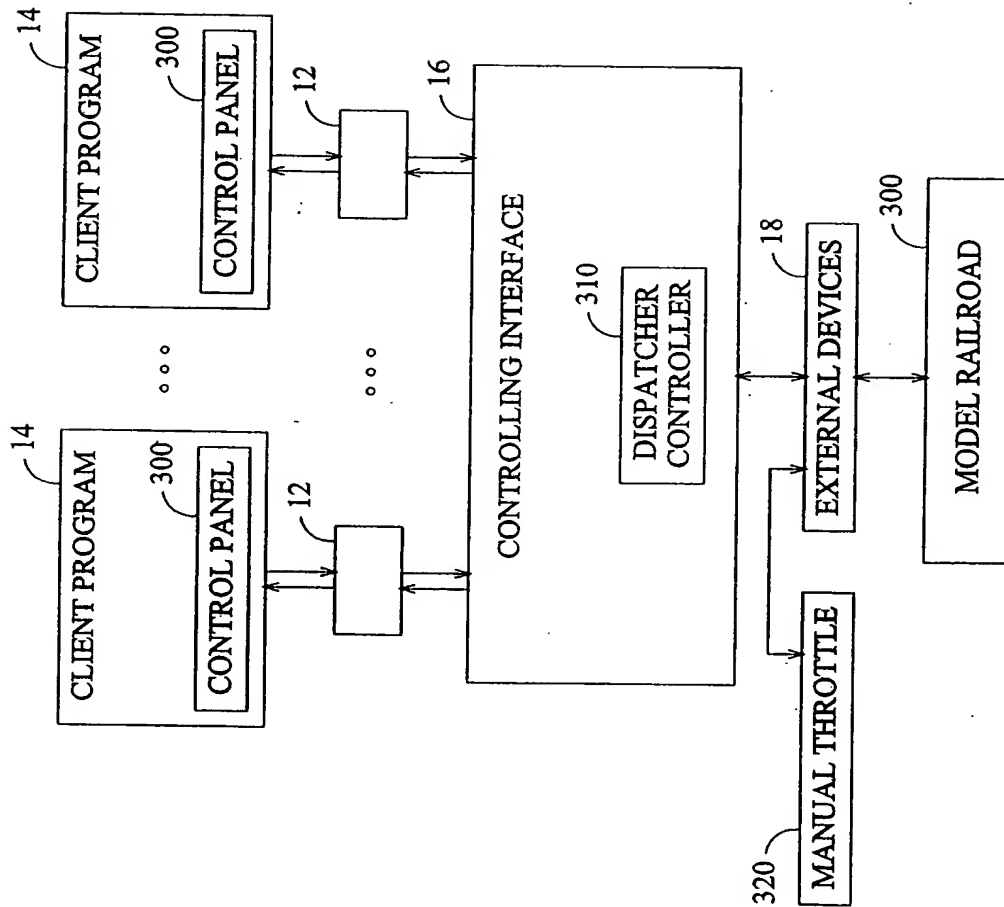


FIG. 10

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### COMMAND QUEUE

PRIORITY	TYPE	COMMAND
5	A	INCREASE LOCO 1 BY 2
37	B	OPEN SWITCH 1
15	B	CLOSE SWITCH 1
26	B	OPEN SWITCH 1
6	A	DECREASE LOCO 2 BY 5
176	B	CLOSE SWITCH 6
123	C	TURN ON LIGHT 5
85	D	QUERY LOCO 3
5	A	INCREASE LOCO 2 BY 7
9	A	DECREASE LOCO 1 BY 2
0	E	MISC
37	D	QUERY LOCO 2
215	D	QUERY SWITCH 1
216	C	TURN ON LIGHT 3
227	D	QUERY SWITCH 5
225	C	TURN ON LOCO 1 LIGHT
0	D	QUERY ALL
255	A	STOP LOCO 1

FIG. 11